

Town of Tolland, MA

Section XII: PERSONAL WIRELESS SERVICES FACILITY (PWSF)

A. Purposes and Intent

The purposes and intent of this Personal Wireless Service Facilities (PWSF) Article are to:

1. Preserve and protect the character, appearance, scenic, historic, environmental, natural and man-made resources and property values of the town while allowing adequate personal wireless services to be developed in Tolland.
2. Assure that personal wireless service is provided to Tolland in the least visually intrusive manner considering siting, sharing, design, height, appearance, screening and camouflage of facilities and other feasible innovative techniques, which may be available.
3. Encourage co-location of Personal Wireless Service Facilities, the sharing of personal wireless service facilities and sites where feasible and appropriate, thereby reducing the number of PWSF that are stand-alone facilities.
4. Provide standards, requirements and responsibilities, including burden of proof, for regulation, siting, appearance, camouflaging, screening, construction, safety, monitoring, modification and removal of PWSF.
5. Provide a procedural basis for action within a reasonable period of time on requests for authorization to place, construct, operate, and modify or remove Personal Wireless Service Facilities..

B. Consistency with Federal and State Law

These regulations are intended to be consistent with the Telecommunications Act of 1996 in that they

- do not prohibit or have the effect of prohibiting the provision of Personal Wireless Services;
- are not intended to be used to unreasonably discriminate among providers of functionally equivalent services;
- do not regulate Personal Wireless Services on the basis of the environmental effects of radio frequency emissions to the extent that the regulated services and facilities comply with the FCC's regulations concerning such emissions.

C. Definitions and Word Usage

As used in this PWSF Article, the following terms shall have the meanings indicated. The words “shall” or “will” indicate mandatory requirements; “may” is advisory and indicates recommendations that are not mandatory.

Term	Definition
Above Ground Level (AGL)	A measurement of height from the natural grade of a site to the highest point of a structure.
Adequate Coverage	Coverage for wireless telephony is “adequate” within that area where the predicted or measured field strength of the transmitted signal is such that most of the time, properly installed and operated transceivers will be able to communicate with the base station without calls being dropped due to objectionable noise (or excessive bit-error-rate for digital). It is acceptable for there to be holes within the area of adequate coverage as long as the signal regains its strength further away from the base station. The outer boundary of the area of adequate coverage is that location past which the signal does not regain.
Antenna	The structure, device or surface from which wireless electromagnetic radio signals are sent and received by a PWSF.
Available Space	The space on a Tower or structure to which Antennas of a Personal Wireless Service Provider are both Structurally Able and Electromagnetically Able to be attached.
Average Tree Canopy Height	An average height found by inventorying the height aboveground level (AGL) of all trees over twenty (20) feet in height for a defined area, such as the area delineated in Section VIII.G.6.b of this Bylaw.
Base Station	The primary sending and receiving site in a wireless telecommunications network. More than one Base Station and/or more than one variety of personal Wireless Service Carrier can be located on a single site.
Camouflaged	A PWSF that is disguised, hidden, part of an existing or proposed structure or placed within an existing or proposed structure is considered "camouflaged."
Co-Location	The location of wireless communications equipment from more than one Carrier or other entity on a single Facility Site.
Communications Equipment Shelter	A structure located at a Base Station designed principally to enclose equipment used in connection with Personal Wireless Service transmissions.
Distance	Distance shall be measured on a horizontal plane.
Electromagnetically Able	The determination that the new signal from and to the proposed new Antennas will not significantly interfere with the existing signals from and to other Facilities located on the same Tower or structure as determined by a qualified professional telecommunications engineer. The use of available technologies to alleviate such interference shall be considered when making this determination.
Elevation	The measurement of height above sea level. The elevation at grade or ground level shall be given as Above Mean Sea Level (AMSL)
EMF	Electromagnetic Frequency Radiation
FAA	Federal Aviation Administration. The Government agency responsible for regulating aviation and related issues, facilities and standards.

FCC	Federal Communication Commission. The Government agency responsible for regulating telecommunications in the United States.
FCC 96.326	A Report and Order that sets national standards for emissions of Radio Frequency emissions from FCC-regulated transmitters. This Report and Order is now contained within Code of Federal Regulations Title 47 Regulations, Section 1 §1.1307.
Fall Zone	The area on the ground within a prescribed radius from the base of a PWSF. The fall zone is the area within which there is a potential hazard from falling debris (such as ice) or collapsing material or which is required for recovery operations.
Guyed Tower	A monopole or lattice Tower that is tied to the ground or other surface by diagonal cables.
Height	The vertical distance between the highest point of the structure, including any device attached, and the natural grade of a site.
Lattice Tower	A type of mount that is self-supporting with multiple legs and cross-bracing of structural steel.
Licensed Carrier	A company authorized by the FCC to construct and operate a commercial mobile radio services system.
Location	References to site location as the exact longitude and latitude to the nearest tenth of a second with bearing or orientation referenced to true North.
Major Modification of an Existing Facility	Any change, or proposed change in power input or output, number of Antennas, change in Antenna type or model, repositioning of Antenna(s), change in number of channels per Antenna above the maximum number approved under an existing Special Permit. Change in the dimensions of an existing and permitted Tower or other structure designed to support Personal Wireless Service transmission, receiving and/or relaying Antennas and/or equipment or any other change, or proposed change, in any such Tower or structure or in any PWSF installed thereon that would have an impact on the interests specified in Section VIII.A. of this Bylaw as determined by the Planning Board.
Major Modification of an Existing Repeater	Any removal of or change in location of or any increase in the dimensions of any Repeater for which a Special Permit has been received.
Monitor/Monitoring	The measurement, by the use of instruments in the field, of the radiation from a Site as a whole, or from individual Personal Wireless Service Facilities, Towers, Antennas or Repeaters.
Mount	The structure or surface upon which Antennas and possibly other PWSF components are supported.
Omni-directional (Whip or Unipole Antenna	A thin rod that beams and receives a signal in all directions.
Personal Wireless Services	Commercial Mobile Services, unlicensed wireless services, and common carrier wireless services. These services include Cellular Services, Personal Communication Services (PCS), Enhanced Specialized Mobile Radio Services, Specialized Mobile Radio Services and Paging Services.
Personal Wireless Service Carrier	An entity, licensed by the FCC to provide personal Wireless Services.
Personal Wireless Service Facility Site, PWSF Site or Facility Site	A property or any part thereof, upon which one or more PWSF are located. The Facility Site includes all required fencing, parking, signage, landscaping, screening, etc, but does not include the access road or utility and communications connections.

Personal Wireless Service Facility (PWSF) or Facility	Any facility for the provision of Personal Wireless Services. The Facility includes the Mount, Antennas, other communications equipment, Communications Equipment Shelters, Repeaters and other related equipment.
Planning Board	The Town of Tolland Planning Board that serves as the Special Permit Granting Permitting Authority (SPGA) under this Article.
Poles or Towers (Types)	Poles include <i>Masts</i> (thin poles that resembles a street light, standard, or telephone pole); <i>Micropoles or Unipoles</i> (a single self-supporting thin vertical pole with no guy wire anchors, within which Antenna and other appurtenances are enclosed); and <i>Monopoles</i> (a single, self-supporting vertical pole with no guy wire anchors to which Antenna and other appurtenances are attached).
Radiated Signal Propagation Studies or Coverage Plots	Computer-generated estimates or drive test results of the emanating signal and prediction of coverage from Antennas or Repeaters sited on a specific Mount. The height above ground, power input and output, frequency output, type of Antenna, Antenna gain, topography of the site and its surroundings are all taken into account to create these simulations. They are the primary tools for determining a need and whether the telecommunications equipment will provide Adequate Coverage for an area. Other generally recognized methodology for assessing signals may also be employed.
Radiofrequency (RF) Engineer	An engineer specializing in electrical or microwave engineering, especially the study of radiofrequencies.
Radiofrequency Radiation (RFR)	The emissions from Personal Wireless Service Facilities
Repeater	A small receiver/relay transmitter of not more than 20 watts output designed to provide service to areas which are not able to receive adequate coverage directly from a base or primary station.
Repeater Site	The location leased or otherwise used by one or more Personal Wireless Service Carriers and upon which one or more Repeater(s) and any required camouflage or screening are located.
Residence	As used in this Section VIII shall include: Dwelling, One-Family; Dwelling, Two Family Dwelling, Accessory Apartment and Seasonal Dwelling or Camp as defined in Section IV of this Bylaw.
Special Permit Granting Authority (SPGA)	The Tolland Planning Board shall be the SPGA for this Article.
Structurally Able	The determination that a Tower or structure is capable of carrying the load imposed by proposed new PWSF components under all reasonably predictable conditions as determined by professional structural engineering analysis.
Tower	A lattice structure or framework, Unipole, Micropole, Monopole, or Mast, that is designed to support Personal Wireless Service transmission, receiving and/or relaying Antennas and/or equipment. The term includes radio and television transmission towers, microwave towers, common carrier towers, cellular telephone towers, alternative tower structures and the like.
Tower - Unipole	A mast-type Antenna mounting system with a fiberglass Antenna radome which accommodates multi-carrier configurations.

D. Exempt Wireless Telecommunications Facilities

This Article specifically exempts the following wireless telecommunications facilities: police, fire, ambulance and other emergency dispatch; federally licensed amateur radio operator; and citizens band radio. No PWSF shall be considered exempt from this Article for any reason whether or not said Facility is proposed to share a Tower or other structures with such exempt uses.

E. Independent Consultants: Selection and Payment

Upon submission of an Application for a Special Permit under this Article, the Planning Board may hire independent consultants whose services shall be paid for by the Applicant.

F. Application Requirements

- 1. Special Permit Application Required.** No Facility, Tower or Repeater shall be erected, constructed, installed, or undergo Major Modification without first obtaining a **Special Permit** from the Planning Board in accordance with the requirements set forth herein.
 - a. New Facilities:** For **New Facilities** including Towers, Repeater Base Stations, Communications Equipment Shelters, and placement of new PWSFs on existing structures, the Applicant must submit all information specified in Section VIII.F.4 and VIII.F.5.
 - b. Major Modification, Co-location or Siting Repeaters:** For a Major Modification of an **Existing** Facility or Tower, for **Co-location** of another service carrier or expansion of a carrier services on an existing Tower or structure, or for the siting of **Repeaters**, the Applicant must submit all information specified by Section VIII.F.4 and VIII.F.6.
- 2. Pre-Application Conference.** Prior to the submission of an application for a Special Permit under this regulation, the applicant is strongly encouraged to meet with the Planning Board at a public meeting to discuss the proposed Personal Wireless Service Facility in general terms and to clarify the filing requirements. The purpose of the conference is to inform the Planning Board as to the planned nature of the proposed Personal Wireless Service Facility. As such, no formal filings are required for the pre-application conference; however, the applicant is encouraged to prepare sufficient preliminary architectural and/or engineering drawings to inform the Planning Board of the location of the proposed Facility, as well as its scale and overall design.
- 3. Request for Waiver of Application Requirements.** At a Pre-Application Conference, an applicant may request in writing a waiver of any requirements of this section VIII.F that the applicant believes are not applicable to his proposal. The Planning Board shall waive or modify said requirements only after determining that the requested information is clearly not needed for evaluation of the application. The Planning Board's finding on the waiver request shall be based on all the pertinent evidence and may include the opinion of Independent Consultants.
- 4. General Filing Requirements.** The Applicant shall file, in accordance with the Town's Zoning Bylaw Section IX.A.2, a Special Permit Application and the required fee together with two copies of all applicable documents, plans, and surveys listed below:
 - a. Proof of FCC Licensing**
 - b. A description of all other documents** filed with the State and Federal regulatory authorities

- c. **Any additional legal/regulatory filing documents** deemed necessary by the Planning Board
- d. **A map** showing the areas covered/served by the PWSF, and the interface with adjacent service areas.
- e. **Applicant information:** The exact legal name, address or principal place of business and phone number of the Applicant. If applicant is an organization or entity other than a person, the state under which it was created must be specified.
- f. **Applicant Principal Contact:** The name, title, address and phone number of the principal contact person to whom correspondence is to be sent. Notices, orders and other papers may be served upon the person so named, and such service shall be deemed to be service upon the applicant.
- g. **Property Owner Information and Consent:** Name, address, phone number and written consent to apply for the Special Permit of the owner of the property on which the proposed PWSF shall be located, or of the owner(s) of the Tower or structure on which the proposed Facility shall be located.
- h. **Site Visitation Consent:** Written consent to permit Planning Board representatives, Independent Consultants and their respective designees to conduct any site visits and inspections at the Facility site to exercise the Planning Board's or the Town of Tolland's rights under this Bylaw. Consent must be from landowners and all other relevant parties with an interest in the Facility site and be valid for so long as the Facilities are in existence.
- i. **Tax Map:** Tax map designation (map and lot number) and Zoning District of subject property.
- j. **Engineering Plans:** Engineering plans shall be prepared, stamped and signed by a Professional Engineer (P.E.) licensed to practice in Massachusetts. Survey plans shall be prepared, stamped and signed by a Professional land Surveyor registered in Massachusetts. All plans shall be on 24" x 36" sheets. Each plan sheet shall have a title block indicating the project title, sheet title, sheet number, date, revision dates, scale(s), and original seal and signature of the P.E. and other professionals who prepared the plan.
- k. **Hazardous Materials:** Identification and location of all fuel, batteries and other hazardous materials proposed for use or storage on the PWSF Site.
- l. **Noise:** Identification of and estimates of the magnitude of any noise arising from normal operation, routine testing and emergency operation of the PWSF and associated equipment which may be audible at the site property boundary. Estimates of noise magnitude at the boundary shall be certified and signed by an acoustical engineer.

5. New Facilities/Tower, Base Station Application Requirements

- a. **Existing Structures - Burden of Proof:** The applicant shall have the burden of proving that there are no existing structures or structures currently under construction which are suitable to locate its Personal Wireless Service Facility so as to provide adequate coverage to Tolland. To meet that burden, the applicant shall take all the following actions to the extent applicable, and submit the listed documents to the Planning Board:
 - i. **List of Potential Site Owners:** A list of all contacts made with owners of potential sites regarding the availability of potential space for a Personal Wireless Service Facility. If the Planning Board informs the applicant that additional existing structures may be satisfactory, the applicant shall contact the property owner(s) of those structures.

- ii. **Inquiries to Owners of Existing Sites:** Copies of all letters of inquiry made to owners of existing structures and letters of rejection. If letters of rejection are not provided, at a minimum, unanswered "Return Receipt Requested" forms from the U.S. Postal Service shall be provided for each owner of existing structures that was contacted.
 - iii. **Documentation of Site Rejection:** If the applicant claims that a structure is not capable of physically supporting a Personal Wireless Service Facility, this claim must be certified by a licensed Professional Civil Engineer. The certification shall, at a minimum, explain the structural issues and demonstrate that the structure cannot be modified to support the Personal Wireless Service Facility without unreasonable costs. The estimated cost shall be provided to the Planning Board.
- b. **Least Intrusive Site - Burden of Proof:** The applicant shall have the burden of proving that the selected site is visually the least intrusive site available to locate its PWSF so as to provide adequate coverage to the Town of Tolland. To meet that burden, the applicant shall take all the following actions to the extent applicable, and submit to the Planning Board:
 - i. **Contacts with Owners of Existing Sites:** A list of all contacts made with owners of less visually intrusive sites than the selected site which are suitable to locate its PWSF. If the Planning Board informs the applicant that additional sites may be satisfactory, the applicant shall contact the property owner(s) of those sites.
 - ii. **Inquiries to Owners of Existing Sites:** Copies of all letters of inquiry made to owners of visually less intrusive sites and letters of rejection. If letters of rejection are not provided, at a minimum, unanswered "Return Receipt Requested" forms from the U.S. Postal Service shall be provided for each owner of less visually intrusive sites that was contacted.
- c. **Available Space Lease:** A written, irrevocable commitment valid for the duration of the existence of any proposed Tower, to rent or lease Available Space for co-location on the Tower at fair-market prices and terms, without discrimination to other Personal Wireless Service Carriers.
- d. **Carrier Contract:** If applicant is not a Personal Wireless Service Carrier, the applicant shall provide a lease or contract with such a carrier stating that the carrier will locate its equipment on the facility if the permit is granted. A PWSF Special Permit shall not be granted to an applicant that is not a Personal Wireless Service Carrier unless the applicant provides a lease or contract with a Personal Wireless Service Carrier so stating
- e. **Documentation of Existing Sites:** Written documentation of any Personal Wireless Service Facilities Sites in Tolland, and within five (5) miles of Tolland boundary lines, regardless of whether or not the applicant has a legal or equitable interest in the site. For each such Facility Site, the applicant shall document in writing why these Facility Sites are not already providing, or do not have the potential by adjusting the Site and/or by the use of Repeaters, to provide Adequate Coverage to the Town of Tolland. For each Facility Site listed, the documentation shall include:
 - i. the exact location (in Longitude and Latitude in degrees , minutes and tenths of seconds),
 - ii. ground elevation above Mean Sea Level,
 - iii. height of Tower or structure,
 - iv. type, manufacturer and model number of Antennae,

- v. Antenna Gain,
 - vi. height of Antennae on Tower or structure,
 - vii. output frequency,
 - viii. number of channels,
 - ix. power input,
 - x. maximum output per channel, and
 - xi. a map showing service coverage.
 - xii. Potential adjustments to these existing Facility Sites, including changes in Antenna type, orientation, Gain, and height or power output shall be specified. Coverage Plots from each of these Facility Sites, as they exist, and with adjustments as above, shall be provided as part of the Application.
- f. **Balloon Test:** Within 35 days of filing an application or such other time as the Planning Board may determine, the applicant shall arrange to fly, or raise upon a temporary mast, a four (4) foot diameter brightly colored balloon at the maximum height and at the location of the proposed Tower. The applicant shall inform the Planning Board and the Board of Selectmen, in writing, of the dates and times of the test, at least 21 days in advance. The notice shall include a second date in case of poor visibility on the initial date. The balloon shall be flown for at least four consecutive hours sometime between 9:00 am and 5:00 PM of the dates chosen.

The Planning Board shall inform the residents of Town of Tolland at least fourteen days in advance of the dates (including alternates), times and location of any scheduled balloon test via a bulk mailing and by publication in a newspaper with a general circulation in the Town of Tolland.

- g. **Maps and Plans:** The following plans and maps:
- i. **Location Map:** Copy of a portion of the most recent USGS Quadrangle map, at a scale of 1:25,000, showing the area within at least two miles from the proposed site. Indicate the location of the Facilities, Base Station and/or Tower; and give the exact Latitude and Longitude of any Tower in degrees, minutes and tenths of seconds.
 - ii. **Vicinity Map:** At a scale of 1" = 200' (1:2400) with contour intervals no greater than 10 feet (3 meters), showing the entire vicinity within a 2000 foot radius of the Tower site, and including the topography, public and private roads and driveways, buildings and structures, bodies of water, wetlands, landscape features, historic sites, habitats for endangered species. Indicate the property lines of the proposed Tower Site Parcel and all abutters within 300 feet of the Tower Site Parcel, (from Assessors maps or available surveys). Include the names of all abutters within 300 feet of the Tower Site Parcel. Indicate any access easement or right of way needed for access from a public way to the Tower, and the names of all abutters or property owners along the access easement or who have deeded rights to the easement.
 - iii. **Existing Conditions Plan:** A recent survey of the Site at a scale no smaller than 1" = 40' (1:480 or metric equivalent 1:500) with topography drawn with a minimum of 2 foot (0.6 meter) contour intervals. Existing utilities, property lines, existing buildings or structures, stone walls or fence lines, wooded areas, individual trees with diameters greater than 12" within a 200 foot radius from the base of the proposed Facility/Tower (labeled with their current heights)

should be shown. Show the boundary of any wetlands or floodplains or watercourses within 200 feet from the Tower or any related facilities or access ways or appurtenances. A Professional Land Surveyor must have completed the survey plan, on the ground, within two years prior to the application date.

- h. Proposed Site Plans:** Proposed Facility Site Layout, grading and utilities at the same scale or larger than the Existing Conditions Plan.
 - i.** Proposed Tower location and any accessory buildings (Communications Equipment Shelter or other). Indicate property boundaries and setback distances to the base(s) of the Tower and to the nearest corners of each of the appurtenant structures to those boundaries, and dimensions of all proposed improvements.
 - ii.** Indicate proposed spot elevations at the base of the Proposed Tower and the corners of all accessory buildings.
 - iii.** Proposed utilities, including distance from source of power, sizes of service available and required, locations of any proposed utility or communication lines, and whether underground or above ground.
 - iv.** Limits of areas where vegetation is to be cleared or altered, and justification for any such clearing or alteration.
 - v.** Any direct or indirect Wetlands alteration proposed.
 - vi.** Detailed plans for drainage of surface and/or subsurface water; plans to control erosion and sedimentation both during construction and as a permanent measure.
 - vii.** Plans indicating locations and specifics of proposed screening, landscaping, ground cover, fencing, etc; any exterior lighting or signs.
 - viii.** Plans of proposed access driveway or roadway and parking area at the Tower Site. Include grading, drainage, and traveled width. Include a cross section of the access drive indicating the width, depth of gravel, and paving or surface materials.
- i. Proposed Tower and Appurtenances:**
 - i.** Plans, elevations, sections and details at appropriate scales but no smaller than 1" = 10' and tower location in degrees, minutes and tenths of seconds.
 - ii.** Two cross sections through proposed Tower drawn at right angles to each other, and showing the ground profile to at least 100 feet beyond the limit of clearing. Dimension the proposed height of Tower above average grade at Tower Base. Show all proposed Antennae, including their location on the Tower.
 - iii.** Details of proposed Tower foundation, including cross sections.
 - iv.** Detail proposed exterior finish and camouflage of Tower.
 - v.** Indicate relative height of the Tower to the Average Tree Canopy Height within a 150 foot radius.
 - vi.** A Professional Engineer's written description of the proposed Tower structure and its capacity to support additional Antennae or other communications facilities at different heights and the ability of the Tower to be shortened if future communications facilities and technologies no longer require the original height.

- vii. Sight Lines or Equivalent or Better Visibility Representation. A minimum of eight view-lines in a zero-to-two mile radius from the site shown beginning at True North and continuing clock-wise at forty-five degree intervals; or a plan map of a circle of two-mile radius of the Facility Site. Any visibility of the proposed Tower shall be indicated on the document. The applicant shall use the USGS quadrangle maps at a scale of 1:25,000 and view lines shall be on a horizontal scale of 1" = 400' with a vertical scale of 1" = 40'. The represented effects of foliage shall assume the seasonal defoliation of deciduous trees.
 - j. **Proposed Communications Equipment Shelter and/or Repeater Base Station:**
 - i. Plans, elevations and cross sections at a scale of no smaller than 1/4" = 1' (1:48) of any proposed appurtenant structure.
 - ii. Representative elevation views indicating the roof, facades, doors and other exterior appearance and materials.
 - k. **Proposed Equipment Plan:**
 - i. Plans, elevations, sections and details at appropriate scales but no smaller than 1" = 10'.
 - ii. Number of Antennae and Repeaters, as well as their exact locations located on a map and specified by Latitude and Longitude (in degrees, minutes and seconds) for Antennae, and by pole number for repeaters.
 - iii. Mounting locations on Tower or structure, including height above ground.
 - iv. Antenna type(s), manufacturer(s), model number(s)
 - v. For each Antenna, the Antenna Gain and Antenna radiation pattern.
 - vi. Number of channels per Antenna, projected and maximum.
 - vii. Power output, in normal use and at maximum output for each Antenna and all Antennae as an aggregate.
 - viii. Output frequency of the Transmitter(s).
6. **Major Modification of an Existing Facility/Tower, Co-location, (including on Existing Structures), and Repeater Application Requirements**
- a. **Maps and Plans:**
 - i. **Location Map:** Copy of a portion of the most recent U.S.G.S. Quadrangle map, at a scale of 1:25,000 and showing the area within at least two miles from the Facility Site. Indicate the location of the PWSF proposed or undergoing Modification, and the exact Latitude and Longitude (in degrees, minutes and tenths of seconds). For Repeaters, specify the pole numbers.
 - ii. **Proposed Facility Site Plan:** A recent survey of the Facility Site at a scale no smaller than 1" = 40' (1:480 or metric equivalent 1:500) showing: **a)** Horizontal and radial distances of Antennae to nearest point on property line and horizontal and radial distances of Antennae to nearest dwelling; **b)** Proposed utilities, including distance from source of power, sizes of service available and required, locations of any proposed utility or communication lines, and whether underground or above ground; **c)** Any changes to be made to the existing Facility's landscaping, screening, fencing, lighting, drainage, Wetlands, grading, driveways or roadways, parking, or other infrastructure as a result of this proposed Modification of the Facility or addition of a Repeater.

- iii. **Proposed Modifications to Communications Equipment Shelter and/or Repeater Base Station:** a) Floor Plans, elevations and cross sections at a scale of no smaller than $\frac{1}{4}'' = 1'$ (1:48) of any proposed appurtenant structure. b) Representative elevation views indicating the roof, facades, doors and other exterior appearance and materials.
- iv. **Proposed Equipment Plan:** as specified in XII.F.5.k
- b. **Balloon Test.** Whenever a proposed modification increases the height of a tall Tower (i.e., one over 35 feet tall), a balloon test as described in XII.F.5.f must be performed with notification as specified therein.
- 7. **Additional Requests:** In addition, the applicant shall provide such other documents as the Planning Board may reasonably request.

G. General Requirements and Criteria

- 1. **Coverage to Tolland.** A Special Permit may be denied if the primary coverage (greater than 50%) from the proposed PWSF is outside Tolland unless the Applicant can show that they are unable to locate within the towns which will primarily receive service from the proposed Facility.
- 2. **Minimize Visual Impact:**
 - a. **Location and Configuration.** The location and configuration of Towers and Personal Wireless Service Facilities shall minimize and mitigate adverse visual and other impacts on the interests and values specified in the Purposes section of this Article. The Planning Board will use the following criteria to assess the visual impacts of Towers and PWSFs:
 - i. Changes in local scale: the relationship between the proposed PWSF or Tower's relative height, mass or proportion to its proposed surroundings;
 - ii. How any proposed new visual elements contrast with their background or against the sky;
 - iii. How different colors and textures of proposed materials appear against a contrasting background; the effect of Camouflaging techniques.
 - iv. Use of materials that are foreign to the existing built environment
 - v. Existing or proposed vegetative screening as it appears during all seasons of the year. Seasonal defoliation of deciduous species may increase visual impact and must be considered.
 - vi. Visibility from residences and traveled ways of facilities proposed for hilltops or ridgelines.
 - b. **Landscaping/Buffers:** All ground-mounted Towers over 35 feet shall be surrounded by a buffer of dense tree growth that extends continuously for a minimum distance of one hundred and fifty (150) feet from the mount and screens views of the facility in all directions. Access drives are exempt. These trees must currently exist on the subject property, be planted on site, or be within a landscape easement on an adjoining site. The Planning Board shall have the authority to decrease, relocate or alter the required buffer based on site conditions if the location otherwise satisfies the visibility and other requirements of this Bylaw. The one hundred and fifty-foot (150) vegetative buffer shall not be removed or topped unless the trees are dead or dying and present a hazard to persons or property

3. **Co-location of PWSFs is Preferred:** Applicants seeking approval shall demonstrate a good faith effort to co-locate with other carriers on existing non-residential structures. These structures include, but are not limited to buildings, existing telecommunications facilities, utility poles, Towers and related facilities and water towers. These shall be permitted in all Zoning Districts except that only Repeaters are permitted in (T-C) Town Center. The Applicant shall have the burden to first evaluate existing structures for PWSF siting. Only after finding that there are no suitable existing structures pursuant to Section VIII. F.5.a, shall a new ground mounted Facility be proposed. Any installation on existing structures must preserve their character and integrity and conform to existing Zoning requirements. In particular, the applicant is urged to consider use of existing telephone and electric utility masts and poles as sites for one or more Repeaters. The applicant shall have the burden of proving that there are no feasible existing structures upon which to locate.
4. **Other Existing Structures – Requirements:** PWSFs may be mounted on or in existing non-residential structures other than wireless Towers. The Planning Board shall review such proposed mounts considering the issues of visibility (including screening and Camouflage), structural integrity, access, attractive nuisance, signage, security and other applicable issues as defined in the Section A: Purposes and Intent and Section G: Requirements and Criteria sections of this Article. Except for Repeaters, no Facility shall be mounted on or in an existing structure closer than 750 feet to a residence.
5. **Public Safety Communications System:** The Town of Tolland public safety communication systems will be allowed access to co-locate on PWSFs if such access is feasible and the Town Police and/or Fire Chief deem it necessary.
6. **Location, Specifications, Dimensions and Camouflaging**
 - a. **Location:** Recognizing that Tolland contains substantial areas that are remote from residences and traveled ways in which PWSFs can be sited, the following location and specification criteria apply.
 - i. **Distance from Existing Residences:** PWSF Towers exceeding 35 feet in height shall be located no closer than 1500 feet from existing residences and shall be sited and configured to minimize visibility from residences and traveled ways. Other PWSFs less than 35 feet in height (except Repeaters) shall be located no closer than 750 feet from existing residences. Repeater requirements are detailed in Section VIII.G.6.e.
 - ii. **Hilltops and Ridgelines:** The siting of new Towers in open areas without trees, on hilltops or on ridgelines should be avoided.
 - iii. **Prohibited Areas: No Tower or PWSF shall be located within any of the following prohibited areas:**
 - a) Massachusetts or Federally regulated Wetland;
 - b) Within 100 feet horizontally from any Massachusetts or Federal regulated Wetland;
 - c) A Massachusetts Certified Vernal Pool;
 - d) The habitat of any State or Federal listed Rare or Endangered Wildlife or Rare Plant Species
 - e) Within 200 feet horizontally of any Outer Riparian Zone;
 - f) Within 250 feet horizontally from any Historic District or property listed or eligible to be listed on the state or Federal Register of Historic Places; if the Historic Place is a residence, residence distance requirements prevail;
 - g) Within 50 feet horizontally from any archaeological site
 - b. **Height:** New Towers above 35 feet in height shall be limited to 20 feet above the average tree canopy height in a radius of 150 feet from the Tower. The Planning Board

may waive the height requirements if they determine that the taller Tower provides adequate service to Tolland in the least visually intrusive manner. They may require a location change, camouflage or screening. In no event may a new Tower exceed 150 feet in height

- c. **Fall Zone:** New Towers greater than 35 feet shall be located at least 1.5 times the height of the Tower from all boundaries of the site upon which the Tower is located

d. **Type of Personal Wireless Service Facility (PWSF)**

- i. Lattice Towers and guyed Towers are expressly prohibited.
- ii. Repeaters. The use of Repeaters and Base Stations is encouraged to provide adequate coverage to Tolland and nearby towns.
- iii. Unipole, Micropole and Monopole Towers and Masts, suitably camouflaged, are permitted.
- iv. Alternative Technologies: Should other less intrusive technologies and/or equipment become available, the Applicant must propose the least intrusive technology to achieve adequate coverage

e. **Repeater Requirements**

The use of Repeaters and Base Stations to provide Adequate Coverage is encouraged as is the use of Town or utility rights of way for the location of Repeaters.

- i. **Location:** It is preferred that Repeaters be located in Town or Utility rights of way mounted on existing utility poles or on new poles or masts erected in these ways. Repeaters may also be located on masts, poles or suitable non-residential structures in other areas. No repeater shall be located on any residence or within 100 feet of any residence. Repeaters shall be located to minimize the impact on views from residences.
- ii. **Heights.** When located on existing poles, masts or other structures, the Repeater shall not increase the overall height of the structure by more than 10 feet. When installed on a new poles or masts, the overall height of Repeater and Mount shall not exceed 35 feet. No Repeater shall be installed less than 25 feet from the ground.
- iii. **Camouflage.** The Planning Board may require painting, screening, or other camouflage to reduce the visual impact of Repeater installations.
- iv. **Fall Zone.** Poles and masts supporting Repeaters shall be located at least 1.5 times the height of the Pole or Mast from all boundaries of the site except that Repeater installations in town or utility rights of way shall be exempt from such requirements.
- v. **Base Stations.** Repeater Base Stations located in Tolland shall meet the PWSF requirements of this Section VIII.

- f. **Communications Equipment Shelters and Accessory Buildings:** Communications Equipment Shelters and accessory buildings shall be architecturally similar and compatible with each other and be no more than 12 feet high. Whenever possible, the buildings shall be joined or clustered to appear as one.

Communications Equipment Shelters shall be Camouflaged behind an effective year-round landscape buffer equal to the height of the proposed building, and/or security barrier. The Planning Board shall determine compatible landscape buffer requirements.

- g. Camouflage and Screening:** The Planning Board may specify for any proposed PWSF the type, size and color of Camouflage, painting, finish and screening (including the types and sizes of trees and shrubs used in screen). The Planning Board may require a Tower over 35 feet to resemble or mimic a native coniferous tree to minimize its visual impact or may require other innovative camouflage techniques which may become available.
- 7. Aviation Hazards.** Towers and PWSFs shall present no hazard to aviation as defined by the FAA.
- 8. Lighting:** No lighting of a Tower, PWSF or Repeater is permitted except for manually operated emergency lights for use only when operating personnel are on-site unless the FAA requires that lighting be installed.
- 9. Power Lines and Network Connections:** To the extent feasible, all network interconnections to and from the telecommunications site and all power to the site shall be installed underground. Any necessary utility lines shall be designed and located to protect, and minimize or prevent debasement of, the scenic character or beauty of the area.
- 10. Access Requirements:** An access roadway must be supplied to the PWSF or Base Station. The roadway shall not be wider than 12 feet, should respect the natural terrain and minimize erosion and run-off. Gravel or crushed stone surface is encouraged. The Planning Board will consult with the Chiefs of all emergency services in the Town of Tolland to assure emergency access. If available, existing entrances and access roads to serve a PWSF shall be utilized unless the applicant demonstrates that a new entrance and access road will result in less visible traffic and environmental impact.
- 11. Security Requirements**
 - a. Fencing:** A six-foot high gated security fence shall surround the area around the Tower, PWSF and Communications Equipment Shelter(s). No razor wire shall be used. If fencing is visible from traveled roadways or residences, appropriate landscape screening shall be installed.
 - b. Signage.** The following signs shall be posted: A sign no greater than two (2) square feet indicating the name of the PWSF owner(s) and 24-hour emergency telephone numbers shall be posted adjacent to the gate. In addition, "No Trespassing" or other warning signs may be posted on the fence. All signs shall otherwise conform to current Town of Tolland Zoning Bylaw. Commercial advertising is prohibited.
- 12. Maintenance:** Owner(s) and operator(s) must maintain the Facility, buildings and security barriers in good condition: maintenance includes painting, structural integrity, buffer area and landscaping.
- 13. Noise:** The Planning Board may impose noise measurement, muffling, sound barriers, enclosures or such other modifications and restrictions as they may reasonably require to protect residences and other interests from noise generated by the PWSF and associated equipment.

H. Approval Criteria.

- 1 Special Permit Procedure:** In acting on any application, the Planning Board shall proceed in accordance with the procedures and timelines established for Special Permits as provided in Article VIII of this Zoning Bylaw

- 2 **Requirements:** In addition to the findings required in Article VIII of this Zoning Bylaw, the Planning Board shall make all applicable findings before granting the Special Permit, as follows:
 - a. That the proposed PWSF will not have undue adverse effect on the character, appearance, scenic, historic, environmental, natural and man-made resources and property values in Tolland;
 - b. That the applicant has demonstrated to the satisfaction of the Planning Board that they have examined Co-location, alternate sites, the use of other existing structures, Repeaters and other feasible technologies and has proposed the least visually intrusive manner of providing adequate Personal Wireless Service to Tolland;
 - c. That the applicant has agreed to implement all reasonable measures to mitigate the potential visual and other adverse impacts of the proposed PWSF; and
 - d. That the proposed PWSF complies with the other requirements of this Zoning Bylaw.
- 3 **Requirements for Denying Permit:** Any decision by the Planning Board to deny an application for a Special Permit under this Article shall be in conformance with 47 U.S.C. sec. 332 (c) (7)(b)(iii) of the Act in that it shall be in writing and supported by substantial evidence contained in a written record. In addition to other requirements in this Bylaw the Planning Board shall consult with legal counsel and other appropriate Independent Consultants, including Engineering Consultants, to review the written explanation of denial to assure that the denial is accurate and complete and conforms to all Town, State and Federal laws and regulations.

I. Monitoring and Compliance

- 4 **EMF Radiation Monitoring** of the PWSFs (other than Repeater or Repeaters) to determine FCC Compliance. An Independent Consultant shall monitor and report in writing to the Planning Board. Monitoring will be paid for by PWSF owner(s). The monitoring shall consist of the following requirements:
 - a. After the granting of a Special Permit and before the Facility begins transmission;
 - b. Within thirty (30) days of initial transmission;
 - c. Ongoing as follows: Every two years from the beginning of transmission from the Facility and following any Modification of an existing Facility which might increase emissions.
- 5 **Repeater Certification:** For each Repeater, an RF Engineer shall certify that emission levels to be generated satisfy FCC 96-326 and any and all other applicable FCC standards and regulations. Repeaters shall be re-certified every two years following initial transmission and after Modification.
- 6 **Excess Emissions:** Should Monitoring or Certification reveal that the Site exceeds FCC 96-326 or any other applicable FCC standard, the owner(s) and operator(s) of all facilities using that site shall be so notified in writing and shall reduce the emissions to compliant levels within 15 business days of notification. Failure to achieve compliance within 15 business days of initial notification shall be a violation of the Special Permit(s) and subject to penalties and fines as specified in Article IX.A and B of this Bylaw.
- 7 **Structural Integrity:**
 - a. **Inspections:** The Planning Board may cause an Independent Consultant (a licensed structural engineer) to inspect the structural integrity and safety of any Tower that

exceeds 35 feet in height once every five years and, in addition, after the apparent occurrence of damage to the Tower or any Modification which might affect the structure. The PWSF owner(s)/operator(s) shall pay for such inspections.

- b. Defects and Remediation:** Should the inspection of any Tower or structure reveal any structural defect(s) which in the opinion of the Independent Consultant render(s) the Tower or structure unsafe, the following actions shall be taken. The Town and the owner shall be notified of the defect in writing upon identification of the defect. Within ten (10) business days of notification of unsafe structure, the owner(s) and operator(s) of the Tower or structure shall submit a plan to remediate the structural defects to the Planning Board and the Building Inspector. The plan shall be initiated within ten (10) days of the submission of the remediation plan and completed as soon as reasonably possible as determined by the Planning Board. Failure to so accomplish this remediation of structural defect(s) shall be a violation of the Special Permit subject to penalties and fines as specified in Article IX A.. and B. of the Bylaw.

J. Discontinuation of Use, Abandonment, and Removal

If the PWSF, Repeater and related equipment are not performing their normal functions on an ongoing basis and continuously for one year, it will be considered abandoned or ceasing to operate. Owner(s)/operator(s)/Licensed Carrier(s) shall meet the following requirements.

- 1. Notification:** The carrier(s) will notify the Town in writing via certified U.S. mail of any proposed date of abandonment or discontinuation of operations no less than thirty (30) days prior. If no notice is received and it is determined by the Building Inspector that the facility has ceased operations, the Town will consider the PWSF abandoned and will establish a time frame for facility removal.
- 2. Removal:** The owner(s)/operator(s)/Licensed Carrier(s) shall physically remove or cause to be removed the PWSF, Repeater and related equipment within six months from the date of abandonment or discontinuation of use at their expense. If the Facility is shared with other carriers, the abandoning Licensed Carrier's unique components (e.g. Antennas) must be removed. The last Owner(s)/operator(s)/Licensed Carrier(s) to operate the PWSF is responsible for removing all remaining equipment and restoring the site. "Physically remove" shall include, but not be limited to:

 - a. Removal** of Towers, PWSFs, Antennas, Mount, Communications Equipment Shelter(s) and security barriers from the subject property. Proper disposal of the waste materials from the site in accordance with local and state waste disposal regulations.
 - b. Restoring** the PWSF site to its natural condition. Grading and landscaping shall remain in the after-condition unless it is necessary to remove part of the landscaping or existing trees for equipment removal. .
- 3. Failure to Remove:** By accepting a Special PWSF Permit, a Licensed Carrier agrees that the Town shall have the authority to enter said facility and property to exercise its rights under any or all applicable Performance, Payment, Removal and Restoration or Maintenance Bond. The Town shall also have access to the property for the purpose of removing the PWSF in the event of discontinuance of use or abandonment and the failure of the permit holder to remove the PWSF. If the Town must remove the PWSF, the bond posted at the time of construction will be used to pay for removal.

K. Fees

The Planning Board shall establish a fee schedule for Tower, PWSF and Repeater applications and renewal fees. The Planning Board shall require a separate fund in the amount as it shall reasonably determine, to cover Independent Consultant fees which shall be replenished in such amount and at such times as the Planning Board may reasonably require.

L. Bonds, Indemnities and Insurance

1. **Bonds:** The Special Permit holder shall post and maintain in effect the following bonds at all times commencing with the construction or installation of a PWSF, Repeater or Tower. Each bond listed below shall be in an amount and on terms satisfactory to the Town of Tolland.
 - a. **Performance Bond** covering the costs of remediation of the Facility Site if damage or non-performance occurs during construction or installation; and
 - b. **Removal and Restoration Bond** to cover the costs of removal of the Personal Wireless Communications Facility site, Repeater and/or Tower and remediation of the Facility Site should the Tower, Facility and/or Repeater cease to operate.
2. **Insurance:** No construction or installation of any PWSF, Repeater or Tower shall be commenced, and none of the foregoing shall be put in operation, unless the Planning Board shall have received:
 - a. **An agreement from each of the PWSF owner(s) and operator(s)** indemnifying the Town of Tolland and its officers, agents, boards and employees on terms satisfactory to the Town of Tolland. Indemnification must cover all liability, cost and expense (including legal fees and expenses) incurred in connection with the construction, operation and removal of such equipment; a
 - b. **Evidence that appropriate insurance has been obtained** and is in effect by all appropriate parties (including, without limitation, owners, operators, contractors and subcontractors).
 - c. **The Town of Tolland shall be named as an additional insured.** All insurance shall be in effect for the entire period the PWSF, Repeater(s), Base Station, Tower and all connected or installed Facilities exist. Satisfactory certificates of insurance shall be filed annually with the Planning Board and Town Clerk.

M. Permit Expiration and Renewal

1. **Commencement of Construction Requirements:** In accordance with Section IX. A. 8 of this Bylaw, any Special Permit granted under this Article shall lapse if the applicant fails to begin construction of the Facility or Tower or Repeater within a two-year period of said grant.
2. **Ten Year Special Permit Period:** All Special Permits granted under this Section shall be granted for ten years. The Planning Board may renew said Special Permit if it determines that the Tower, and/or Facility and/or Repeater so permitted shall have been and shall remain in compliance with all terms and conditions of this Bylaw and of any conditions placed upon the original Special Permit at the time of granting.

N. Transfer of Permits

Each holder of a Special Permit issued under this Bylaw shall give the Planning Board not less than thirty (30) days prior written notice of each transfer by the permittee of any ownership, leasehold or other interest. Notice shall include the right of use but not any stock, limited partnership or other similar indirect interest in any PWSF, Repeater or Tower covered by the Special Permit. Such notice shall specify the transferee's name and address and describe the transferred item(s) and interests. The transferor and transferee shall provide the Planning Board with such documents and information relating to the transfer of such item(s) and interest as the Planning Board may reasonably request. Effective at the time of transfer, the transferee shall be bound by all of the obligations of this Bylaw and any documents executed under the Special Permit by the transferor that relate to the transferred item(s). The transferee shall execute and deliver to the Planning Board such documents as the Planning Board may reasonably request confirming that it is bound by and subject to such obligations and conditions.

O. Severability

The invalidity of any section or provision of this Article shall not invalidate any other section or provision thereof.

P. Acceptable Use

Notwithstanding any other Town of Tolland Bylaw or Zoning Bylaw, an existing structure or use on the same lot shall not preclude the installation of a Personal Wireless Service Facility (PWSF) on such lot. In the event that a PWSF is the sole use of the lot, the lot shall not be subject to the provisions of Section V. Paragraph. 4 in that the lot may have two principal uses, one of which may be a PWSF

Q. Prevailing Provisions

To the extent that any other provision of the Tolland Bylaws may be in conflict with Section VIII, Personal Wireless Service Facilities (PWSF), the provisions of Section VIII. shall prevail regarding PWSFs.

Approved by the Attorney General, Commonwealth of Massachusetts
June 30, 2001